



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

of flocculi can be obtained with the two edges simultaneously. Similarly two or even three photographs, showing sections of the flocculi at as many different levels, can also be taken simultaneously.

The results obtained with the 13-foot spectro-heliograph are very satisfactory, showing the advantages of improved definition of the solar image, high dispersion and freedom from diffuse light in the spectro-heliograph and exceptional smoothness of motion. Successive photographs of the disk made with the  $H\alpha$  line, when combined in a stereoscope, show the flocculi standing in high relief, and clearly indicate the identity of the very dark hydrogen flocculi (called "filaments" by DESLANDRES) with prominences, in which form they are subsequently photographed when carried to the limb by the Sun's rotation.

GEORGE E. HALE.

#### PROGRESS OF WORK ON THE 100-INCH TELESCOPE.

The close of the 1915 construction season finds the steel dome for the 100-inch telescope completely enclosed and in working order, tho considerable miscellaneous work remains to be done. This includes the exterior sheathing of the fixed portion of the building (the inner wall of which is in place), the construction and erection of the observing platform and cage-hoist, exterior and interior painting, etc. It is satisfactory to find that the dome turns very smoothly and easily on the rails, which were finished true after erection with a high-speed grinder carried by a radial arm pivoted at the center of the building. This is a matter of importance, as the high dispersion spectrograph for stellar spectra, to be mounted on a pier in line with the polar axis, must be free from vibration during the very long exposures which will be required.

Two carloads of parts of the telescope mounting are already on Mount Wilson and four carloads are on the way from the Fore River Ship Yards at Quincy, Massachusetts, where the heavier work has been done. The balance will follow very soon, excepting the tube, which was to come by the Panama Canal, now closed to traffic because of slides. Many of the smaller parts of the mounting, including the driving clock, have been completed in our Pasadena instrument shop.

The parabolizing of the 100-inch mirror is progressing satisfactorily in our optical shop, and is now 85 per cent complete. The optical tests for figure are made both at the center of curvature and at the focus of the paraboloid, in the latter case with the aid of a 60-inch plane mirror figured for the purpose.

The erection of the telescope mounting on its pier will be begun in 1916, after the completion of some unfinished work on the larger parts and the painting of the interior of the dome. It is not likely that the telescope can be ready for use before the summer of 1917.

GEORGE E. HALE.

#### THE SPECTRUM OF THE COMPANION OF SIRIUS.

We have made several attempts during the past two years to secure a spectrum of the companion of *Sirius*. Its position is favorable, the distance, according to Professor BARNARD'S recent measures, being more than 10" in a position angle of about 70°. The great mass of the star, equal to that of the Sun and about one-half that of *Sirius*, and its low luminosity, one one-hundredth part of that of the Sun and one ten-thousandth part of that of *Sirius*, make the character of its spectrum a matter of exceptional interest.

Most of the spectrum photographs have been taken at the 80-foot focus of the 60-inch reflector with the Cassegrain combination of mirrors. At this focus the distance of the companion from *Sirius* is 1.2<sup>mm</sup>. The rays from *Sirius*, due to the supports of the auxiliary mirrors, are very prominent, but form angles of about 45° with the line joining *Sirius* with the companion, and so do not reach the slit unless the images begin to blur badly. The main difficulty in securing satisfactory photographs is, of course, the strong general illumination of the field and the presence of subsidiary rays which contribute more or less light to the slit as the seeing varies. During the exposures *Sirius* has been kept on the black metal screen in which is cut the opening forming the star window, while the companion is held in a position slightly to one side of the center of this window. Accordingly it is possible to compare on the photographs the spectrum of the point at which the companion is maintained with the spectrum due to the general